



Reply to Attn of:

MEMORANDUM
NASA AIRCRAFT MANAGEMENT
SAFETY RISK PROFILE

Purpose:

This memorandum documents NASA's process for identifying, accessing, and managing the agency's primary aviation risks to aircraft flight operations. This document provides an overview of the safety-risks that are generally experienced by NASA aircraft operations. This memorandum details the process used to enable the success of NASA's aircraft operations in support of space exploration, space technology development, and scientific and aeronautics research.

Applicability:

This memorandum applies to NASA Headquarters and NASA Centers, including component facilities and the Jet Propulsion Laboratory.

Authority:

NPD 7900.4C "NASA Aircraft Operations Management"

NPR 7900.3C "Aircraft Operations Management Manual"

Operations Overview:

In accordance with agency policy, the Aircraft Management Division (AMD) within the Office of Strategic Infrastructure (OSI) is responsible for functional leadership, staff support to the Administrator, and central services as they relate to aircraft management. AMD is the Agency's Senior Aviation Management Official (SAMO) as required by FMR 102-33.30. The AMD also is the Agency focal point for aviation operations, aircraft management issues, and

implementation of aviation safety policy developed by the Office of Safety and Mission Assurance. The AMD, is responsible for developing policies governing the management of NASA aircraft, including aircraft operations, aircraft maintenance, aviation training, airworthiness, flight readiness reviews, cost effectiveness, and implementation of Federal regulations and policies. NASA aircraft operations and operations metrics are described in the NASA Annual Aircraft Report published by AMD for the Office of Strategic Infrastructure (OSI).

NASA operates 60 manned aircraft of 24 different types and 9 reportable Unmanned Aircraft Systems (UAS). NASA flies approximately 5,000 sorties with approximately 11,000 hours a year. There are between 800 to 1000 personnel involved in aircraft operations from pilots/aircrew, maintainers, engineers, to scientists. In addition, NASA acquires about 400 hours of Commercial Aviation Services (CAS) a year to supplement its own aircraft operations. NASA operates aircraft world-wide in myriad environments and flight regimes. NASA conducts its own maintenance on most of its aircraft, ranging from line maintenance to back shops, including manufacturing, depot level, and overhaul capabilities. With the exception of very limited passenger flights that are conducted under civil rules, NASA operates aircraft primarily as public use and provides its own airworthiness certificates for modifications and operations in support of NASA's mission.

Hazards Management:

NASA aircraft operational risks are managed thru three organizations based on the risk owner: AMD within the Office of Strategic Infrastructure (OSI), the Intercenter Aircraft Operators Panel (IAOP), and each Center Flight Operations Department.

Overarching agency aircraft management risks are managed thru the AMD using the Active Risk Management System (ARMS). Risks in the ARMS can be elevated to higher agency authority for management.

Overarching agency aircraft operational risks are managed thru the IAOP using the IAOP ASO Subpanel. Risks identified thru the IAOP ASO Subpanel are then directed to the proper agency authority thru the IAOP for corrective action but continuously tracked by the Subpanel.

Specific aircraft operational or mission risks are managed thru each Center's Flight Operations Department thru an Airworthiness and Flight Safety Review Board (AFSRB), Flight Readiness Review (FRR), Operation Readiness Review (ORR), or Mission Readiness Review (MRR) as prescribed in NPR 7900.3C "Aircraft Operations Management Manual".

Aircraft Operations' Risks:

As a global leader in aeronautics, earth and space science, and space exploration, NASA needs to manage risks inherent to aircraft operations within the unique operating envelopes and flight regimes that NASA conducts its missions. Major risks associated with aircraft operations are ensuring that resources are available to support operations, aircraft are well maintained, aircraft modifications are properly engineered and installed to ensure airworthiness, and that pilots and maintainers are trained and maintain their proficiency to high standards.

Processes in place to provide risk management oversight of safety concerns related to these overarching risks, as well as risks identified through NASA's continuous risk management process, are provided by AMD, the IAOP, and Center Flight Operations organizations. These risks are continuously reviewed and managed through established agency policies and procedures. Feedback on operational effectiveness is provided to management through the IAOP, aviation safety councils, and the biennial agency aviation cultural survey program.

Risk Assessment Coding:

The established agency process for determining risk based on exposure, likelihood, and severity are delineated in NPR 8000.4A "Agency Risk Management Procedural Requirements".

Summary:

Agency aircraft risks are actively managed within the NASA aircraft operational community. The AMD and IAOP work continuously to identify and mitigate risks to ensure that NASA protects the safety and health of the public, its team members, and those assets that the Nation entrusts to the Agency. The NASA aircraft operations community is committed to achieving the highest standards in safety, engineering, research, operations, and management in support of mission success. We are also committed to maintaining an environment of trust, honesty, ethical behavior, respect, and candor. Our leaders enable this environment by encouraging and rewarding a vigorous, open flow of communication on all issues, in all directions, among all employees without fear of reprisal.



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OCT 7 / 2014